Table 1: Reference Guide to Sample Collection and Laboratory Analysis Part A: Soils, Sediments, Sludges, and Fill Materials					
Parameter	**Preparation/ Analytical Method[1]**	**Method Detection Limit[2]**	**Practical Quantitation Limit[3]**	**Container Description (Minimum) [Clear glass may be substituted for amber if samples are protected from exposure to light, this exception does not apply to metals]**	**Preservation/ Holding Time**
Gasoline range organics	AK101*	2 mg/kg	20 mg/kg	4 oz. amber glass, TLS	Methanol preservative, Cool $4^{o} \pm 2^{o}C$ / 28 days
Diesel range organics	AK102*	2 mg/kg	20 mg/kg	4 oz. amber glass, TLC	Cool $4^{o} \pm 2^{o}C$ / 14 days to extraction, less than 40 days to analysis of extract
Residual range organics	AK103*	10 mg/kg	100 mg/kg	4 oz. amber glass, TLC	Cool $4^{o} \pm 2^{o}C$ / 14 days to extraction, less than 40 days to analysis of extract
Aliphatic gasoline range organics	AK101AA*	2 mg/kg	20 mg/kg	4 oz. wide-mouth amber glass jar with Teflon lined silicon rubber septum seal	Methanol preservative / 28 days from sampling
Aromatic gasoline range organics	AK101AA*	2 mg/kg	20 mg/kg	4 oz. wide-mouth amber glass jar with Teflon lined silicon rubber septum seal	Methanol preservative / 28 days from sampling
Aliphatic diesel range organics	AK102AA*	2 mg/kg	20 mg/kg	4 oz. wide-mouth amber glass jar, TLC	Cool $4^{o} \pm 2^{o}C$ / 14 days to extraction, less than 40 days to analysis of extract
Aromatic diesel range organics	AK102AA*	2 mg/kg	20 mg/kg	4 oz. wide-mouth amber glass jar, TLC	Cool $4^{o} \pm 2^{o}C$ / 14 days to extraction, less than 40 days to analysis of extract
Aliphatic residual range organics	AK103AA*	10 mg/kg	100 mg/kg	4 oz. wide-mouth amber glass jar. TLC	Cool $4^{o} \pm 2^{o}C$ / 14 days to extraction, less than 40 days to analysis of extract
Aromatic residual range organics	AK103AA*	10 mg/kg	100 mg/kg	4 oz. wide-mouth amber glass jar, TLC	Cool $4^{o} \pm 2^{o}C$ / 14 days to extraction of sample, less than 40 days to analysis of extract
Benzene	AK101**, 8021B or 8260B	0.007 mg/kg	0.05 mg/kg	4 oz. amber glass, TLS	Methanol preservative, Cool $4^{o} \pm 2^{o}C$ / 28 days
Toluene	AK101**, 8021B or 8260B	0.007 mg/kg	0.05 mg/kg	4 oz. amber glass, TLS	Methanol preservative, Cool $4^{o} \pm 2^{o}C$ / 28 days
Ethylbenzene	AK101**, 8021B or 8260B	0.007 mg/kg	0.05 mg/kg	4 oz. amber glass, TLS	Methanol preservative, Cool $4^{o} \pm 2^{o}C$ / 28 days
Total xylenes	AK101**, 8021B or 8260B	0.007 mg/kg	0.05 mg/kg	4 oz. amber glass, TLS	Methanol preservative, Cool $4^{o} \pm 2^{o}C$ / 28 days
Total BTEX	AK101**, 8021B or 8260B	0.007 mg/kg	0.05 mg/kg	4 oz. amber glass, TLS	Methanol preservative, Cool $4^{o} \pm 2^{o}C$ / 28 days
Polynuclear Aromatic Hydrocarbons (PAH)[4]	8270C or 8310	0.1 mg/kg	1 mg/kg	4 oz. amber glass, TLS	Cool $4^{o} \pm 2^{o}C$ / 14 days to extraction, less than 40 days to analysis of extract
Total Volatile Chlorinated Solvents[6]	8260B or 8021B	0.008 mg/kg	0.08 mg/kg	4 oz. amber glass, TLS	Methanol preservative, Cool $4^{o} \pm 2^{o}C$ / 28 days
Polychlorinated biphenyls (PCBs)	8082	0.01 mg/kg	0.05 mg/kg	4 oz amber glass, TLC	Cool $4^{o} \pm 2^{o}C$ / 14 days to extraction, less than 40 days to analysis of extract
Total Arsenic	6010B, 6020, 7060A, or 7061A	0.3 mg/kg	3 mg/kg	100mL Widemouth HDPE jar[5], TLC	6 months
Total Barium	6010B, 6020, 7080A, or 7081	20 mg/kg	200 mg/kg	100mL Widemouth HDPE jar[5], TLC	6 months

Table 1: Reference Guide to Sample Collection and Laboratory Analysis Part A: Soils, Sediments, Sludges, and Fill Materials					
Parameter	**Preparation/ Analytical Method[1]**	**Method Detection Limit[2]**	**Practical Quantitation Limit[3]**	**Container Description (Minimum) [Clear glass may be substituted for amber if samples are protected from exposure to light, this exception does not apply to metals]**	**Preservation/ Holding Time**
Total Cadmium	6010B, 6020, 7130, or 7131A	0.8 mg/kg	8.0 mg/kg	100mL Widemouth HDPE jar[5] , TLC	6 months
Total Chromium	6010B, 6020, 7190, or 7191	2 mg/kg	20 mg/kg	100mL Widemouth HDPE jar[5], TLC	6 months
Total Lead	6010B, 6020, 7420, 7421	2 mg/kg	20 mg/kg	100mL Widemouth HDPE jar[5], TLC	6 months
Total Nickel	6010B, 6020, 7520, or 7521	2 mg/kg	20 mg/kg	100mL Widemouth HDPE jar[5] , TLC	6 months
Total Vanadium	6010B, 7911, 6020, or 7910	20 mg/kg	200 mg/kg	100mL Widemouth HDPE jar[5], TLC	6 months

Legend to follow Part B

Notes to Table 1, Part A:

[1] Unless otherwise noted, all preparation and analytical methods refer to those contained in EPA's *Test Methods for the Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, adopted by reference in 18 AAC 78.090(i).

[2] Method detection limits (MDL), specified in 40 C.F.R. Part 136, Appendix B, revised as of July 1, 1996, adopted by reference, are determined at the department's chemistry laboratory and participating department-approved laboratories.

[3] Practical quantitation limits (PQL), like method detection limits, are instrument specific. PQLs must be established by each laboratory and must equal or have a value lower than the PQL in the table. For purposes of this chapter, PQL = 10 x MDL, except for PCB which is PQL = 5x MDL.

[4] Naphthalene can be analyzed by AK101.

[5] HDPE, High Density Polyethylene sample collection bottles, critically cleaned for trace metals analysis.

[6] May be analyzed out of AK101 methanol preserved sample, if not used, then sample must be preserved with methanol in the field.

* ADEC Analytical Methods AK101, AK102, and AK103 are included in Appendix D. ADEC Analytical Methods AK101AA, AK102AA, and AK103AA are included in Appendix E.

** The AK101 method can be extended for specific determination of volatile aromatics (BTEX) as specified in EPA Method 8021B for solids utilizing methanol preservation option only. All AK101 samples must be preserved with methanol.

Table 1: Reference Guide to Sample Collection and Laboratory Analysis (cont.) Part B: Ground, Surface, Waste, and Marine Waters[4]					
Parameter	**Preparation/ Analytical Method[1]**	**Method Detection Limit[2]**	**Practical Quantitation Limit[3]**	**Container Description**	**Preservation/ Holding Time**
Gasoline range organics	AK101*	10 µg/L	100 µg/L	40 mL VOA, TLS	HCL to pH less than 2, 4° ± 2°C /14 days from sampling
Diesel range organics	AK102*	80 µg/L	800 µg/L	1 L amber glass, TLC	HCL to pH less than 2, 4° ± 2°C /14 days to extraction, 40 days to analysis of extract
Residual range organics	AK103*	50 µg/L	500 µg/L	1 L amber glass, TLC	Acidify to a pH of 2 using HCL, H_sSO_4 or HNO_3 / 7 days to extraction, 40 days to analysis of extract
Aliphatic gasoline range organics	AK101AA**	2 µg/L	20 µg/L	40 ml VOA with Teflon lined silicon rubber septum seal	HCL to a pH of 2 / 14 days from sampling
Aromatic gasoline range organics	AK101AA**	0.2 µg/L	2 µg/L	40 ml VOA with Teflon lined silicon rubber septum seal	HCL to a pH of 2 / 14 days from sampling
Aliphatic diesel range organics	AK102AA**	20 µg/L	200 µg/L	1 L amber glass, TLC	Acidify to a pH of 2 using HCL, H_sSO_4 or HNO_3 / 7 days to extraction, 40 days to analysis of extract
Aromatic diesel range organics	AK102AA**	20 µg/L	200 µg/L	1 L amber glass, TLC	Acidify to a pH of 2 using HCL, H_sSO_4 or HNO_3 / 7 days to extraction, 40 days to analysis of extract
Aliphatic residual range organics	- -	- -	- -	- -	- -
Aromatic residual range organics	AK103AA**	50 µg/L	500µg/L	1 L amber glass, TLC	Acidify to a pH of 2 using HCL, H_sSO_4 or HNO_3 / 7 days to extraction, 40 days to analysis of extract
Benzene	AK101, 8021B, or 8260B	0.7 µg/L	5 µg/L	duplicate 40 mL vials/sample, TLS	HCL to pH less than 2, 4° ± 2°C /14 days
Toluene	AK101, 8021B, or 8260B	0.7 µg/L	5 µg/L	duplicate 40 mL vials/sample, TLS	HCL to pH less than 2, 4° ± 2°C /14 days
Ethylbenzene	AK101, 8021B, or 8260B	0.7 µg/L	5 µg/L	duplicate 40 mL vials/sample, TLS	HCL to pH less than 2, 4° ± 2°C /14 days
Total xylenes	AK101, 8021B, or 8260B	0.7 µg/L	5 µg/L	duplicate 40 mL vials/sample, TLS	HCL to pH less than 2, 4° ± 2°C /14 days
Total BTEX	AK101, 8021B, or 8260B	0.7 µg/L	5 µg/L	duplicate 40 mL vials/sample, TLS	HCL to pH less than 2, 4° ± 2°C /14 days
Polynuclear Aromatic Hydrocarbons (PAH)[6]	8270C or 8310	1 µg/L	10 µg/L	1 L amber glass, TLS	4° ± 2°C, Ascorbic acid, dark / 7 days to extraction, 40 days to analysis of extract
Total Volatile Chlorinated Solvents	8021B or 8260B	0.8 µg/L	8 µg/L	duplicate 40 mL vials/sample, TLS	HCL to pH less than 2, 4° ± 2°C $Na_3S_2O_3$/ 14 days
Polychlorinated biphenyls (PCBs)	8081A or 8082	1 µg/L	5 µg/L	1 L amber glass, TLC	4° ± 2°C / 7 days to extraction / 40 days to analysis of extract
Total Arsenic †	6010B, 6020, 7060, or 7061	8 µg/L	80 µg/L	min. 100 mL HDPE[5]	HNO_3 to pH less than 2 / 6 months max. total holding time
Total Barium	6010B, 6020, 7080A, or 7081	10 µg/L	100 µg/L	min. 100 mL HDPE[5]	HNO_3 to pH less than 2 / 6 months max. total holding time
Total Cadmium †	6010B, 6020, 7130, or 7131A	0.6 µg/L	6 µg/L	min. 100 mL HDPE[5]	HNO_3 to pH less than 2 / 6 months max. total holding time
Total Chromium †	6010B, 6020, 7190, or 7191	10 µg/L	100 µg/L	min. 100 mL HDPE[5]	HNO_3 to pH less than 2 / 6 months max. total holding time

Table 1: Reference Guide to Sample Collection and Laboratory Analysis (cont.) Part B: Ground, Surface, Waste, and Marine Waters[4]					
Parameter	**Preparation/ Analytical Method[1]**	**Method Detection Limit[2]**	**Practical Quantitation Limit[3]**	**Container Description**	**Preservation/ Holding Time**
Total Lead †	6010B, 6020, 7420, or 7421	2.0 µg/L	20 µg/L	min. 100 mL HDPE[5]	HNO_3 to pH less than 2 / 6 months max. total holding time
Total Nickel	6010B, 6020, 7520, or 7521	10 µg/L	100 µg/L	min. 100 mL HDPE[5]	HNO_3 to pH less than 2 / 6 months max. total holding time
Total Vanadium	6010B, 6020, 7910, or 7911	20 µg/L	200 µg/L	min. 100 mL HDPE[5]	HNO_3 to pH less than 2 / 6 months max. total holding time

Notes to Table 1, Part B:

[1] Unless otherwise noted, all preparation and analytical methods refer to those contained in EPA's *Test Methods for the Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, (PB84128677), adopted by reference in 18 AAC 78.090.

[2] Method detection limits (MDL), specified in 40 C.F.R. Part 136, Appendix B, revised as of July 1, 1996, adopted by reference, are determined at the department's chemistry laboratory and participating department-approved laboratories.

[3] Practical quantitation limits (PQL), like method detection limits, are instrument specific. PQLs must be established by each laboratory and must equal or have a value lower than the PQL in the table. For purposes of this chapter, PQL = 10 x MDL, except for PCBs which is PQL = 5 x MDL.

[4] Sample collection and laboratory analyses for water collected from drinking water sources must be done in accordance with 18 AAC 80.

[5] HDPE, High Density Polyethylene sample collection bottles, critically cleaned for trace metals analysis.

[6] Naphthalene can be analyzed by 8021B or 8260B.

* ADEC Analytical Methods AK101, AK102, and AK103 are included in Appendix D. ADEC Analytical Methods AK101AA, AK102AA, and AK103AA are included in Appendix E.

† Analytical methods 6010B, 7080A, 7130, 7420, 7520, and 7910 are for high contaminant level screening only. These can be used for closure only if site specific MDL criteria are met. Analytical methods 6020, 7031A, 7060, 7061, 7081A. 7190, 7191, 7421, 7521, and 7911 are acceptable for closure.

Legend to Table 1:

PAH = acenaphthene, anthracene, benzo-a-anthracene, benzo-a-pyrene, benzo-b-fluoranthene, benzo-k-fluoranthene, chrysene, dibenzo-a,h-anthracene, fluorene ideno-123-cd-pyrene, naphthalene, and pyrene
VOA = Volatile Organic Analysis;
TLC = Teflon lined screw caps;
TLS = Teflon lined septa sonically bonded to screw caps